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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,568	06/02/2000	Jens Christian Karger	P19296	5191

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EXAMINER
JIMENEZ, MARC QUEMUEL

ART UNIT	PAPER NUMBER
3726	

DATE MAILED: 07/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/585,568	KARGER ET AL.	
	Examiner	Art Unit	
	Marc Jimenez	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-27 and 29-60* is/are pending in the application.

4a) Of the above claim(s) *4-10,37,40 and 42-60* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,11-27,29-36,38,39 and 41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/27/2002 has been entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 2, 21, 25, 29-36, and 39** are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (4,990,963).

Yamamoto et al. teach an elastic roller comprising: a hard roller core **34, 44**, an

elastic coating layer **35, 43** at an outer side of the hard roller core **34, 44**, the elastic coating layer **35, 43** comprising an elastic matrix material (col. 3, lines 36-41) and fillers (col. 3, lines 34-36) imbedded in the matrix material, wherein a thermal conductivity of the fillers (col. 3, lines 34-36) is considerably higher than a thermal conductivity of the matrix material (col. 3, lines 36-41), at least a portion of the fillers (col. 3, lines 34-36) arranged to improve thermal conductivity of the elastic coating layer (col. 1, lines 62-68 to col. 2, lines 1-11), wherein the roller is structured and arranged for smoothing paper webs.

Note that the hard roller core **34, 44** comprises metal (col. 4, line 44), the metallic fillers comprise metal (col. 3, lines 62-65), the metallic fillers are arranged to extend up to a radially outer surface of the elastic matrix material (col. 3, line 36), the thermal expansion of coefficient of the metallic fillers (metal) is smaller than a thermal expansion coefficient of the matrix material (plastic) and the thermal expansion coefficient of the metallic fillers is substantially the same as a thermal expansion coefficient of the hard roller core (both aluminum), note the functional and connecting layers (fig. 3e), and the concentration of the metallic fillers increases toward the core (see fig. 2e).

With respect to Claim 21, note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

5. **Claims 1, 2, 11, 14-25, 29-32, 35, 36, 38, 39, and 41** are rejected under 35 U.S.C. 102(b) as being anticipated by Sukenik (3,852,862).

Sukenik teaches the following in *Fig. 1*: an elastic roller comprising: a hard roller

core **12**, an elastic (col. 1, line 63, ie. "resiliency") coating layer **13** at an outer side of the hard roller core **12**, the elastic coating layer **13** comprising an elastic matrix material (col. 2, lines 2-3, ie. "various inorganic or organic binders") and fillers (col. 2, line 2, ie. "fibers") imbedded in the matrix material (col. 2, line 24, ie. "fiber mix"), wherein a thermal conductivity of metallic fillers (col. 1, lines 61-62, ie. metallic wools) is considerably higher than a thermal conductivity of the matrix material (col. 2, lines 2-3, ie. "various inorganic or organic binders", the fillers are made of metal, hence having a higher conductivity than the matrix material which is made of inorganic or organic binders), at least a portion of the fillers (col. 2, line 2) comprising metallic fillers (col. 1, lines 61-62, ie. "metallic wools") arranged to improve thermal conductivity of the elastic coating layer (this limitation is inherent in the Sukenik reference since the addition of a metallic filler would improve the thermal conductivity of the elastic coating layer), wherein the roller is structured and arranged for smoothing paper webs.

Note that the hard roller core **12** comprises metal (col. 1, line 55), and the metallic fillers comprises metal (col. 1, lines 61-62), the metallic fillers are metal fibers (col. 2, lines 52-56), a portion of the fibers is aligned in the axial direction (see figure), at least a portion of the fibers comprises a predominant portion of the fibers (col. 2, lines 55-57), at least a portion of the fibers is aligned in the radial direction (see figure), at least a portion of the fibers is aligned in statistical distribution (see figure), the fibers are arranged in one of a fiber layer and radially sequentially arranged fiber layers (see figure), the elastic layer further comprises additional fillers (col. 1, lines 57-63) arranged in the elastic matrix **13**, the additional fillers comprise fibers including at least one of carbon and glass fibers (col. 1, lines 60-61), the additional fillers comprises at least one of quartz and PTFE (col. 1, lines 60-61), the metallic fillers are arranged to extend up to a

radially outer surface of the elastic matrix material (see figure), a thermal conductivity of the metallic fillers is considerably higher than a thermal conductivity of the matrix material the metallic fillers are arranged to extend radially inwardly up to a surface of the hard roller core **12**, the thermal expansion coefficient of the metallic fillers is smaller than a thermal expansion coefficient of the matrix material (the fillers are made of metal, hence having a smaller thermal expansion coefficient), the roller core and the fillers are made of metal and have substantially the same thermal expansion coefficient, since the layers are "built up" (col. 2, lines 5-10), the coating layer **13** comprises a functional layer (outermost built up layer) arranged in a radially outwardly region and a connecting layer (innermost built up layer closest to the hard roller core **12**) arranged in a radially inwardly region, the connecting layer is adapted to connect the functional layer to the hard roller core **12**, the metallic fillers are arranged at least in the functional layer (see figure), the matrix material comprises a resin-hardener combination (col. 2, lines 2-3, ie. "inorganic or organic binders"), a concentration of the metallic fillers is substantially uniformly distributed within the elastic matrix material (see figure), and a concentration of the metallic fillers increases in a radially inwardly direction toward the hard roller core (col. 1, lines 43-46 and col. 2, lines 56-60).

With respect to Claim 21, note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

6. **Claims 1, 2, 11, 14-23, 25, 29-31, 33-36, and 38** are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe (4,368,568).

Watanabe teaches the following in *Fig. 1-6*: an elastic roller comprising: a hard roller core **1**, an elastic coating layer **2** at an outer side of the hard roller core **1**, the elastic coating layer **2** comprising an elastic matrix material and fillers (col. 3, lines 50-65) imbedded in the matrix material, wherein a thermal conductivity of the metallic fillers is considerably higher than a thermal conductivity of the matrix material (the fillers are made of metal, hence having a higher conductivity than the matrix material), at least a portion of the fillers comprising metallic fillers (col. 3, lines 65-66), arranged to improve thermal conductivity of the elastic coating layer (this limitation is inherent in Watanabe since the addition of metallic fillers would improve the thermal conductivity of the elastic coating layer), wherein the roller is structured and arranged for smoothing paper webs (col. 1, lines 7-8).

Note that the hard roller core **1** comprises metal (abstract, lines 1-2), and the metallic fillers comprises metal (col. 3, line 65), the metallic fillers are metal fibers (col. 3, line 65), a portion of the fibers is aligned in the axial direction (see figure 5), at least a portion of the fibers comprises a predominant portion of the fibers (see figure 5), at least a portion of the fibers is aligned in the radial direction (see figure 5), at least a portion of the fibers is aligned in statistical distribution (see figure 5), the fibers are arranged in one of a fiber layer and radially sequentially arranged fiber layers (see figure 5), the elastic layer further comprises additional fillers (col. 3, lines 39-68) arranged in the elastic matrix **2**, the additional fillers comprise fibers including at least one of carbon and glass fibers (col. 3, lines 65-66), the metallic fillers are arranged to extend up to a radially outer surface of the elastic matrix material (see figure 5), the metallic fillers are arranged to extend radially inwardly up to a surface of the hard roller core **1**, the thermal expansion coefficient of the metallic fillers is smaller than a thermal expansion

coefficient of the matrix material (the fillers are made of metal, hence having a smaller thermal expansion coefficient), the roller core and the fillers are made of metal and have substantially the same thermal expansion coefficient, the matrix material comprises a plastic material (col. 3, lines 50-52), the matrix material comprises a resin-hardener combination (col. 3, lines 50-52), a concentration of the metallic fillers is substantially uniformly distributed within the elastic matrix material (col. 3, lines 50-52),

With respect to Claim 21, note that the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

7. **Claims 1, 2, 11, 14-27, 29, 31, 36, 38, 39, and 41** are rejected under 35 U.S.C. 102(b) as being anticipated by Brouwer (5,735,388).

Brouwer teaches the following in *Fig. 5*: an elastic roller comprising: a hard roller core **120**, an elastic coating layer **104** at an outer side of the hard roller core **120**, the elastic coating layer **104** comprising an elastic matrix material and fillers **102** imbedded in the matrix material **104**, wherein a thermal conductivity of the metallic fillers **102** is considerably higher than a thermal conductivity of the matrix material, at least a protion of the fillers **102** comprising metallic fillers (col. 5, line 22-26) arranged to improve thermal conductivity of the elastic coating layer **104** (this limitation is inherent in Brouwer since the addition of metallic fillers would improve the thermal conductivity of the elastic coating layer) , wherein the roller is structured and arranged for smoothing paper webs.

Note that the metallic fillers **102** penetrate the radially outer surface and the radially outer surface of the elastic matrix material **104** is coated with metal **102** (see outer surface of matrix material **104** which is coated with metal **102**).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sukenik (3,852,862).

Sukenik teaches the invention cited above with the exception of the fillers being made of "metal-coated" fibers.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, the particular structure of the fiber is clearly a matter of designed choice, wherein no significant problems are solved by using a "metal-coated" fiber versus the metal fiber taught by the prior art. It appears that metal fibers would equally as well as "metal-coated" fibers.

Response to Arguments

10. Applicant's arguments filed 6/27/2002 have been fully considered but they are not persuasive.

11. Applicant argues that Sukenik fails to disclose a thermal conductivity of the fillers being considerably higher than a thermal conductivity of the matrix material, however, the metallic fillers (col. 1, lines 60-63) are made of metal and the matrix material (col. 2, lines 2-3) are made of organic or inorganic binders. Clearly metal has a higher thermal conductivity than inorganic or organic binders. Furthermore, the matrix material of Sukenik can contain ceramic (col. 1, lines 32-34) which also has a thermal conductivity lower than metal.

12. Applicant argues that Sukenik fails to disclose that at least a portion of the fillers comprising metallic fillers are arranged to improve thermal conductivity of the elastic coating layer, however, the addition of metal in the matrix of Sukenik inherently provides improved thermal conductivity of the elastic coating layer.

13. Applicant argues that the mere inclusion of metallic fillers, as taught by Sukenik, would not improve thermal conductivity of the layer unless the fillers were arranged in accordance with the features of the instant invention, however, there are no structural differences between the applicant's claimed invention and the teachings of Sukenik. The claimed invention only requires that the metallic fillers are "arranged", there is no specific metallic filler orientation claimed of applicant's roll that distinguishes the claimed invention from the Sukenik roll.

14. Applicant argues that the coating of Sukenik is formed form a slurry which is wholly distinct form the matrix material of the instant application, however, there are no differences between the claimed matrix material and the Sukenik matrix material.

15. In response to applicant's argument that Sukenik fails to provide any teaching of a roller structured and arranged for smoothing paper webs, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in

order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

16. Applicant argues that Watanabe fails to disclose a thermal conductivity of the fillers (col. 3, lines 65-66, ie. "metal fibers") is considerably higher than a thermal conductivity of the matrix material (col. 3, lines 50-65, ie. "thermosetting resin, such as epoxy or unsaturated polyester resin, and/or other liquid resins"), however, it is clear that metal has a higher thermal conductivity than a thermosetting resin such as epoxy or unsaturated polyester resin. Applicant's disclosure even supports the fact that metal has a higher conductivity than thermosetting resin (see page 3, lines 17-21 and page 9, lines 12-13 of applicant's specification).

17. Applicant argues that Watanabe fails to disclose that at least a portion of the fillers comprise metallic fillers arranged to improve thermal conductivity of the elastic coating layer, however, the claimed invention only requires that the metallic fillers are "arranged", there is no specific metallic filler orientation claimed of applicant's roll that distinguishes the claimed invention from the Watanabe roll. There are no **structural differences** between the claimed invention and the Watanabe roll.

18. Applicant argues that Brouwer fails to disclose a thermal conductivity of fillers being considerably higher than a thermal conductivity of the matrix material, however, the fillers **102** of Brouwer inherently has a higher thermal conductivity than the matrix material **104** because the fillers are metal oxides or wool and the matrix is made of aluminum.

19. Applicant argues that Brouwer fails to teach that the metallic fillers are arranged to improve the thermal conductivity of the coating, however, there are no structural differences between the claimed invention and the Brouwer roll. The fillers of Brouwer are clearly "arranged". The claims do not require any particular orientation of the fillers with respect to the matrix and therefore Brouwer clearly teaches this limitation.

Contact Information

20. Telephone inquiries regarding the status of applications or other general questions, by persons entitled to the information, should be directed to the group clerical personnel. In as much as the official records and applications are located in the clerical section of the examining groups, the clerical personnel can readily provide status information. M.P.E.P. 203.08. The Group clerical receptionist number is (703) 308-1148.

If in receiving this Office Action it is apparent to applicant that certain documents are missing, e.g., copies of references cited, form PTO-1449, form PTO-892, etc., requests for copies of such papers or other general questions should be directed to Tech Center 3700 Customer Service at (703) 306-5648, or fax (703) 872-9301 or by email to CustomerService3700@uspto.gov.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is **703-306-5965**. The examiner can normally be reached on **Monday-Thursday and the second Friday of the bi-week, between 9am-6pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tom Hughes can be reached on 703-308-1806. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

Other helpful telephone numbers are listed for applicant's benefit.

Allowed Files & Publication	(703) 308-6789 or (888) 786-0101
Assignment Branch	(703) 308-9723
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If the information desired is not provided above, or a number has been changed, please call the general information help line below.

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MJ
July 11, 2002

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